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ABSTRACT

According to a recent national survey, 9 out of 10 high school students in the United States reported that they had tried alcohol at least once. Previous research has identified drug resistance self-efficacy (DRSE) as an important construct in adolescent drug use, which is the focus of this research study. A total of 361 students in grades 9-12 completed a 121-item questionnaire which focused on their use of beer, wine coolers, liquor, and marijuana. Results indicate that adolescents' perception of their ability to resist generalizes across situations, particularly for wine coolers and liquor. As perceptions of resistance in one situation increased, perceptions of resistance in another situation also increased. However, differences were observed in the magnitude of the relationship for certain drugs, specifically beer, wine coolers, and marijuana. Analysis of results show strong intercorrelations for each drug studied among the DRSE situations. Party DRSE was the strongest predictor of DRSE in a solitary context. Different predictive models, though, were found for the high frequency beer and marijuana users with respect to DRSE in solitary/angry situations. (RJM)

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The Generality of Drug Resistance Self-Efficacy Across Social Situations and Solitary Contexts

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According to a recent national survey, nine out of ten high school seniors in the United States reported that they had tried alcohol at least once, and two out of three indicated they had used alcohol in the previous 30 days (U.S. Department of Health and Human Services, 1991). Thirty-two percent of seniors reported having used five or more drinks in a row in the past two weeks; 20% of that same group used illicit drugs and about 19% were daily smokers (University of Michigan Institute for Social Research, 1991).

In response to such statistics, the current administration has made it a national priority to reduce substance abuse. In a recent speech President Clinton stated that "The American people must come out from behind locked doors and shuttered windows to help reclaim our streets from drugs and gangs and crime" (Inaugural Speech, 1997). In 1996 Clinton presented his five-step drug plan to fight the nations drug problem. In that plan Clinton's goals are to get young people to reject drugs, to use effective treatment and prevention to break the vicious drug cycle, to stop drugs at the nations borders, to stop the sources of supply, and to reduce the terrible social and economic cost imposed by drugs on U.S. society.

This data reveals alarming levels of substance abuse among America's youth. It is indicative of the need for a deeper understanding of the factors which affect student's resistance to drugs.

For years, many school-based prevention programs have been peer-oriented, with a focus on refusal and social life skills. These programs have been designed to address empirically-validated correlates of drug use, particularly aspects of peer influence. While these programs with an emphasis on resistance skills (e.g. D.A.R.E., S.T.A.R.) have shown inclusive results, there

is some evidence to indicate that their effectiveness of these programs is linked to the participants' drug use levels. Specifically, peer approaches appear to reduce the use of drugs but have less impact on drug abuse (Tobler, 1986). For teenagers who abstain or occasionally use drugs, peer programs with an emphasis on resistance skills have been most effective. There is little support for the usefulness of these programs with heavier users. Rather, programs which have enhanced environmental experiences (alternatives programs) and addressed emotional factors have demonstrated relatively more success with this high-risk, problem use group. This may be intuitively reasonable given that occasional drug use is socially influenced whereas problem use is more related to internal, psychological processes. Further, Diclemente (1986), found situations involving negative affect to be correlated highly with temptation to use drugs. These results highlight the importance of distinguishing between drug use levels in studies and considering the etiological basis of problem use in relation to situation-specific responsiveness to drug-taking opportunities. Moreover, the importance of drug resistance self-efficacy merits continued study and has been the topic of several investigations. Previous research has shown important factors related to drug resistance self-efficacy. These include the etiology of resistance self-efficacy (sources), drug-opportunity context (situations), and drug type.

Bandura's (1977) construct of self-efficacy, focuses on one's ability to perform a specific behavior in a specific behavior context. These self -efficacy judgments affect whether the adolescent is likely to try the behavior, how much effort the individual will expend, and how sustaining the effects will be. Theoretically, adolescents with high levels of resistance self-efficacy would be

more likely to resist the pressure to use drugs with greater levels of success than those who possess lower levels of resistance self-efficacy. Bandura also identifies four primary sources of self-efficacy: past success performing the behavior, modeling and vicarious experience, verbal persuasion, and emotion (Bandura, 1986). With respect to the latter, negative affect would be predicted to influence drug resistance self efficacy. Thus, the relationship between situations involving different levels of emotional intensity might be weaker.

Bandura argues that self-efficacy judgments are domain specific (1986); his argument leads to the question of whether the ability to resist drugs is specific to the drug and the situation, or generalizable across drugs and situations. Therefore, does having confidence in one's ability to resist cigarettes correspond to one's ability to resist beer and is there like correspondence between the ability to resist in social context with the ability to resist in solitary context.

Past research on the generalizability of self-efficacy has provided conflicting answers to these questions. Hays and Ellickson (1990),who examined the nature of resistance self-efficacy across different drugs and situations, found resistance skills to be generalizable across substances but not situations. They found that adolescents tend to distinguish their capacity to resist across different settings. Their research noted that adolescence resistance skills were affected by the pressure in the situation to conform. High pressured situations involving drugs resulted in lower levels of perceived drug resistance self-efficacy.

Alberts, Hechts, Rasssulo, and Krizek (1992), did not find evidence for the generalizability of resistance skills across drugs or situations. With this

urban sample, they found drug-related differences in resistance self-efficacy. Specifically, adolescents showed higher levels of resistance self-efficacy with alcohol than with harder drugs. They associate these differences with the different ways these substances were offered within the situations. For example, offers involving alcohol were simpler and less persuasive than offers of other drugs. They also found the degree of pressure in drug offers to increase with the number of people present within the social situations.

In an earlier study, Albert, Rasssulo and Hechts (1991) found that urban adolescents were less likely to resist alcohol compared to harder drugs. These students perceived drugs and alcohol differently from one another in terms of severity and consequences. Thus, the generalizability of drug resistance self efficacy across different drugs was not supported.

Studies are needed which examine drug resistance self-efficacy in a variety of situations, under conditions of negative affect, and for rural populations. Additionally, because the etiology of problem use has been linked to emotional factors (internal psychological processes), problem users perceptions of their ability to refuse may be different in situations in which negative affect is experienced.

Method

Subjects

Participants included students in grades nine through twelve enrolled in a lower to lower-middle class rural high school in northeastern Ohio. A complete census of 498 students were originally selected for study. From this complete roster of students, 13 percent were absent and 10 percent declined to participate. Reasons for nonparticipation were primarily confined to

identification concerns and feelings of intrusiveness. Another 7 percent were excluded during the data cleaning phase due to response distortions, unreadable code erasures, and item omissions. A total of 361 students were used for analyses.

Forty-seven percent of the subjects were male and 53 % were female. European-Americans represented the majority of (97.5%) students, while less than 1% described themselves in each of the following categories: Black or African American, Chicano or Mexican American, and Asian. Students ranged in age from 14 to 18; 5.5% were 14 years of age, 49.1% were 15 or 16, and 45.4% were 17 or 18. Since student knowledge of parental income levels was doubtful, information concerning parent education and occupations was requested. Edwards and Thomas (1993) forewarns that request for too much demographic data can lead to suspicion which can negatively affect respondent honesty and candidness, particularly if sensitive information is requested (e.g., drug involvement). In an effort to minimize self-selection out of the study, it was felt that perceptions of anonymity would be compromised if a parent questionnaire was introduced requesting family information and requiring matched codes. Student-reported data indicated that they were predominantly lower to lower-middle class, based on community demographic sources, and student-reported employment and educational classifications of parents. Approximately half of the mothers were reported as having completed high school, with another 51% reported as having some college to a graduate degree. Similar educational levels were reported for fathers, but with a slightly higher percentage (7-8%) identified as having not completed high school compared to mothers (3.9%). Sixty-seven percent of the mothers were reported to be

employed full-time, whereas 91.7% of the fathers worked full-time. While only 3% of fathers were reported as unemployed, not surprisingly more mothers (15.8%) were not working outside of the home (the remainder were employed part-time). Closely aligned with educational levels, the majority of mothers and fathers were identified as laborers, with less than 25% given a professional classification.

Procedure

Students completed a 121 item questionnaire during their scheduled English classes which assessed drug-resistance self-efficacy, an ecology of psychosocial variables, and frequency of drug use. Procedures were employed prior to and during data collection to encourage participation and minimize response bias. Initially, parents were apprised of the survey by the school, followed by an explanatory letter accompanying an informed consent form. The purpose of the study was explained with assurance of complete anonymity and minimal schoolwork disruption. Derived from pretesting results, a standard set of administration and collection procedures were given to all test administrators. These procedures prevented teachers from approaching students during the administration and from determining student identification from the collection sequence. Teachers were provided with a description of the study and instructions in advance of the survey administration date. Confidentiality measures also included preventing teachers and other nonresearch personnel from identifying students by name or number, as students were instructed not to put any kind of identifying information on the answer sheets. Data management steps included data cleaning by trained graduate students and direct data transcription by a mainframe computer from

machine-readable answer sheets. Prior to analyses, the data were examined for outliers, response distortion, and completion errors.

Measures

While measures are available for use with adult populations, drug resistance self-efficacy measures for adolescents which address several gateway drugs, as well as solitary and social contexts are generally unavailable or difficult to access. Thus, for purposes of the present study, a multidimensional drug resistance self-efficacy instrument was developed to measure adolescents' perceived ability to resist drug offers in both social and solitary situations under conditions of negative affect. Drug resistance self-efficacy was measured for five situations: (1) home alone with a friend, (2) at a party with friends, (3) on a date with a preferred person, (4) home alone and depressed, and (5) home alone and angry. The latter two situations represented those in which negative affect was experienced. To convey a pressured situation, respondents were told that friends wanted them to use the substances identified. The gateway drugs included beer, wine coolers, liquor, and marijuana.

A 4-point Likert scale was used ranging from "Could Easily Refuse" to "Could Not Refuse." Principal-components analysis did not strongly support situation-specific constructs inclusive of all four gateway drugs. Consequently, for these exploratory analyses, single-item measures for each drug were used to examine the relationship between the different drug resistance self-efficacy situations.

Analyses

Based on previous research showing different etiologies and responsiveness to prevention/intervention programs between drug users and problem users

(Tobler, 1986), separate analyses were performed for three drug use groups. Dielman (1994) also supports the use of separate groups for analysis purposes, stating that "Combining prior users and nonusers in the analysis of outcome data can attenuate or completely mask program effects that would be detected if the sample were stratified by prior use."

Groups in the present study were identified as abstainers, low frequency users, and high frequency problem users for each gateway drug studied. Abstainers indicated they did not use the specified drugs. The low frequency subgroup was comprised of students who indicated that they used "a couple times per year" or "once a month." The high frequency students specified use as either "1 to 3 days per week" or "daily. Table 1 reports the number of students in each subgroup.

For each of the three drug-level groups, zero-order correlations were initially computed for bivariate comparisons between situations. Stepwise multiple regression analyses were subsequently performed to determine the strongest predictors of D.R.S.E. (Drug resistance self-efficacy) in solitary contexts in which negative affect is experienced for high frequency beer and marijuana users.

Table 1

Number Of Participants By Level Of Use

Drug	Abstainers	Group Low Frequency Users	High Frequency Users
Beer	135	177	49
Wine Coolers	91	213	57
Liquor	91	213	57
Marijuana	216	89	54

Results

Zero Order Correlations by Gateway Drug

Beer

Abstainers: All correlations were statistically significant, ranging from .56 to .84 with the lowest positive correlation found between Home (w/friend) DRSE and Date DRSE, and Home (w/friend) DRSE and Party DRSE.

Low Frequency Users: All zero-order correlations reached statistical significance, with moderately high coefficients in the 60's and 70's, suggesting that this group believes they would respond similarly across all situations.

High Frequency Users: While all relationships reached statistical significance for this problem use group, the magnitude of the coefficients dropped considerably between Home Alone/Sad DRSE and Home Alone DRSE. Similarly, a weaker relationship was found between Home Alone/Angry DRSE and Date DRSE.

Wine Coolers

A consistent pattern of correlations was found for all three drug use groups. All coefficients reached statistical significance, but ranged from a low of .24 to .89. The weakest relationships were found between the Party DRSE variable and the remaining four situations, perhaps suggesting that perceptions of resistance skills may differ in a party situation.

Liquor

As was found with wine coolers, a consistent pattern of correlations was found for the three drug use groups. However, the wide range in coefficients between situations was not found for this drug. Rather, coefficients were generally quite high, in the 70's and 80's.

Marijuana

For the Abstainers and low frequency use groups, statistically significant relationships were found between all DRSE situations. Furthermore, the relationships were quite strong, with coefficients ranging from the 60's to 80's. However, a very different pattern of relationships occurred for the high frequency use group. High, statistically significant correlations were found between (1) Home (w/friend) DRSE and Party DRSE (r=.76), (2) Home/Mad DRSE and Party DRSE (r=.69), and (3) Alone/Sad DRSE and Alone/Mad DRSE (r=.65). Significant, moderately strong coefficients occurred between (1) Home (w/friend) DRSE and Date DRSE (.53) and (2) Party DRSE and Date DRSE (r=.45).

For this group of high frequency users, the relationship between Home (w/a friend) DRSE and Home Alone/Sad reached statistical significance, but was considerably weaker (r=.27). Home Alone/Sad DRSE and Home Alone/Mad DRSE were not significantly related to Date DRSE.

Multiple Regression Analyses

Stepwise multiple regressions were performed only for the high frequency users of beer and marijuana to determine the contribution of situation-specific DRSE to the explanation of DRSE in solitary contexts under negative affect conditions. Three DRSE situations in which negative affect was not specified were stepped into the equation. These were (1) Home Alone (w/friend) DRSE, Party DRSE, and Date DRSE. When predicting Home Alone/Depressed DRSE, the Home Alone/Angry DRSE situation was also included among the non-negative affect conditions, and vice versa.

For the high frequency beer users, only Party DRSE proved to be a significant predictor of Home Alone/Depressed DRSE, accounting for 34% of the variance (Table 2). Home Alone/Depressed DRSE was the only variable to contribute to the prediction of Home Alone/Angry DRSE (Table 3).

For the high frequency marijuana group, Party DRSE made a small contribution to the prediction of DRSE in a Home Alone/Depression situation (Table 4). However, the two variables which best predicted DRSE in a Home Alone/Angry situation were (1) Party DRSE and (2) Home Alone/Sad DRSE. The stepwise entry of the latter variable accounted for a statistically significant increase in R2, explaining an additional 7% of the variance beyond the 48%' explained by Party DRSE (Table 5).

Table 2

Stepwise Multiple Regression Analyses of the Concurrent Predictors of DRSE in a Home Alone/Depressed Situation for High Frequency Beer Users

Variable	R^2	F
Party DRSE	.34	-24.40***

*** p<.001

Table 3

Stepwise Multiple Regression Analysis of Concurrent Predictors of DRSE in a Home Alone/Angry Situation for High Frequency Beer Users

Variable	R^2	F
Home Alone/Sad	.32	-24.40***

*** p<.001

Table 4

Stepwise Multiple Regression Analysis of the Concurrent Predictors of DRSE in a Home Alone/Depressed Situation for High Frequency Marijuana Users

Variable	R^2	F
Party DRSE	.27	19.22

*** p<.001

Table 5

Stepwise Multiple Regression Analyses of the Concurrent Predictors of DRSE in a Home Alone/Angry Situation for High Frequency Marijuana Users

Variable	R^2	R^2_{chg}	F	F_{chg}
Party DRSE	.48		47.47***	
Home Alone/Sad	.55	.07		7.700**

*** p<.001

Discussion

Overall, analysis of bivariate relationships among the DRSE situations generally revealed strong intercorrelations for each drug. However, the strength of these DRSE situational relationships were found to diminish for the high frequency use groups with respect to two drugs: beer and marijuana.

For abstainers and low frequency users, all DRSE situations were highly intercorrelated, suggesting that DRSE is generalizable across situations for this particular drug. For example, the strong correlation between Home (with a friend) DRSE and Date DRSE indicates that as perceptions of resistance in a home alone with a friend situation increases, perceptions of resistance in a date situation also increases. The lack of experience with this substance in any situation and/or the personal fortitude and determination to resist likely influences a generalized resistance perception across all situations.

However, while the intercorrelations were also statistically significant for the problem users (high frequency use group) of beer, the magnitude of some correlations dropped considerably, indicating a weaker relationship between some DRSE situations. Situations involving negative affect in solitary contexts showed a weaker relationship to select social situations (Home Alone w/a Friend and Date). In particular, DRSE in a home alone, depressed situation was not as strongly associated with DRSE in a home alone with a friend situation. Affect may well influence the magnitude of this relationship. Studies are needed to further examine the influence of affect on DRSE with problem users. Findings from this study also showed that DRSE in a home alone, angry situation was not as strongly related to DRSE on a date with a preferred person as it was to other situations. Essentially, the extent to which rural teenagers feel they can resist beer when on a date is not as strongly correlated with the extent to which they feel the ability to resist when in a solitary situation and feeling angry.

With respect to wine coolers, all three drug use groups showed high situational positive intercorrelations. Albeit statistically significant, the relationship between DRSE at a party and the other four situations was the weakest. This indicates that adolescents' perception of resistance skills for wine coolers may be different in a party situation compared to other situations such as home alone with a friend, home alone and sad, and on a date.

Results for drug resistance self-efficacy with liquor, also showed a consistent pattern of correlations for the three drug use groups. For example, abstainers, low frequency, and high frequency users all showed a consistent relationship of drug resistance self-efficacy between situations.

High intercorrelations were found between all DRSE situations for abstainers and low frequency users of marijuana , suggesting a general response. However, high frequency users of this drug illustrate a different pattern of relationships among the DRSE situations. Statistically significant relationships were found between the following: (1) DRSE when home alone with a friend and party DRSE, (2) DRSE when home alone mad and party DRSE, and (3) DRSE when home alone sad and home alone mad DRSE.

Results of the multiple regression analyses showed that Party DRSE was the strongest predictor of DRSE in a solitary context in which depression or sadness was experienced. These findings would suggest that for this high use group, students feelings of being able to resist beer and marijuana may well be similar in both party and home alone/depressed situations. However, characteristics of these situations for high frequency users require further study to explain this relationship. Individual perceptions and levels of emotionality which distinguish these situations from date and home alone situations may provide further insight into these correlational findings.

Feelings of resistance self-efficacy in a home alone/depressed situation made the strongest contribution to the prediction of DRSE in a home alone/angry situation for the high frequency beer use group. Since both situations involve negative affect, the emotional intensity associated with these two situations may explain this finding. Interestingly, for the problem marijuana users, DRSE in social situations best predicted DRSE in a home alone/angry situation. Different experiences and or perceptions associated with marijuana may influence these relationships. Description of these perceptions is needed to ascertain why social situations would exert more

influence in the prediction of DRSE in a solitary context in which anger is experienced.

Summary

Based on these preliminary correlational findings, it appears that adolescents' perception of their ability to resist generalizes across situations, particularly for wine coolers and liquor. In other words, as perceptions of resistance in one situation increases, perceptions of resistance in another situation increases as well. However, differences were observed in the magnitude of the relationship for certain drugs, specifically beer, wine coolers, and marijuana. Overall, analysis of bivariate relationships among the DRSE situations generally revealed strong intercorrelations for each drug. However, the strength of some of these DRSE situational relationships was found to diminish for the high frequency use group with respect to two drugs: beer and marijuana. Multiple regression analyses showed that Party DRSE was the strongest predictor of DRSE in a solitary context in which depression was experienced for both the high frequency beer and marijuana users. However, different predictive models were found for the high frequency beer and marijuana users with respect to DRSE in solitary/angry situations. For marijuana, Party DRSE and Home Alone/sad in two social situations represented the strongest situational predictors, whereas for beer, only the solitary context with sad affect best predicted DRSE in a solitary, angry situation.

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